

# Index

## A

action duration 171  
 adaptability 97  
 adaptation 178  
 adaptive workflows 258  
 agent design 177  
 agent elicitation 176  
 agent implementation 177  
 agent integration 177  
 agent modeling 177, 178  
 agent technology 96  
 agent-based commerce systems 30  
 Agent-Oriented (AO) methodology  
     178  
 Agent-Oriented Modeling 176  
 agent-oriented software development  
     176  
 agents 95  
 algorithms 23  
 Anatomic Organ (AO) 80  
 anchors 58  
 antonym 32  
 application domain 43, 78  
 application programming interfaces  
     (API) 151  
 ARchitecture of Integrated information  
     Systems (ARIS) 208  
 ARIS 259  
 ARIS-to-FlowMark interface 259  
 art-collector 45  
 articulate knowledge 122  
 aspect descriptor 44  
 aspect type 44

association class 230  
 associative relationships 62  
 automated reasoning 19  
 autonomy 97, 178  
 AX marker 74

## B

BCC Business and Procedure Act  
     1939 132  
 BDI (Belief-Desire-Intention) 178  
 behavior aspect 7  
 Brisbane Financial Emergency Act  
     1939 132  
 business analysis 260  
 business engineering 163  
 business engineering methodology  
     163  
 business network reengineering (BNR)  
     196  
 business process reengineering (BPR)  
     196  
 business rules 128  
 business scope redefinition (BSR)  
     196

## C

cardinalities 46  
 CASE environments 55  
 catalog clearing house 147  
 Catalog Exchange Protocol (CEP)  
     147  
 classification criteria 30, 33  
 classificatory knowledge 33

classifying relations 30  
 cluster 21  
 cognitive overhead 58  
 collaboration 98  
 Combined Formal Technique 113  
 commercial web site development  
     tools 55  
 compatibility relation 81  
 ComplementarityDeterminingRegion  
     (CDR) 23  
 complex domains 78  
 Complex of Coordinated Control 113  
 complex schemas 65  
 component relationships 62  
 computer network 248  
 computer science 95  
 computer support 109  
 Computer-Supported Cooperative  
     Work (CSCW) 194  
 computing domain 121  
 concept 41  
 concept acquisition modeling 30  
 conceptual data model 7  
 conceptual hypermedia modeling 41  
 conceptual modeling 55, 56, 59  
 conceptual relations 78  
 conceptual schema 69  
 conceptual web site modeling 55  
 conflict resolution 131  
 consistency constraints 57  
 constructed ontology 39  
 content description 78  
 context-based navigation paradigm 42  
 context-sensitive visualization principle  
     50  
 cooperation 178  
 Cooperation Component 194, 200  
 cooperative information system (CIS)  
     194  
 coordinated planning 108  
 coordinated resource control 109  
 Coordination Component 194, 200  
 Coordination theory 163  
 core catalogs 138  
 correlation 32  
 current web site development 55

## D

data modeling 71  
 data modeling abstractions 42  
 data structure 43  
 data warehousing 139  
 database queries 51  
 database schemata 17  
 decision control systems 116  
 decision making systems 108  
 decision support system 109  
 Decision-Making Units (DMU) 115  
 defeasible logic 128, 129  
 defeasible rules 134  
 definition study 5  
 Description Logics (DL) 19  
 DescriptionUnit 23  
 design documentation 9  
 destination node 43  
 DFD (Data Flow Diagram) 183  
 digital catalog library (DCL) 146  
 distribution function (CDF) 253  
 DNA sequence 21  
 DNA sequence data 16  
 domain 46  
 domain analysis 177, 260  
 domain conceptualization 31  
 dynamic business environment 69  
 dynamic constraint 74  
 dynamic environment 98

## E

e-commerce based ontology 30  
 e-commerce concept acquisition  
     process 33  
 e-commerce concept relation ontology  
     31  
 e-commerce concepts 31  
 e-commerce ontology 30  
 e-markets 163  
 EE-Cat 137, 139  
 EJB (Enterprise Java Beans) 91  
 electronic catalog 137, 139  
 electronic catalog system 137  
 Electronic Commerce (EC) 95, 137,  
     177  
 Electronic Commerce Application 176

electronic markets (e-markets) 163  
 elementary information objects 60  
 EMC (Event-driven Method Chain) 211  
 emerging knowledge 196  
 emulation 166  
 Enhanced Entity Relationship (EER)  
     19  
 enterprise information system (EIS)  
     194  
 enterprise or organization IS (EIS) 196  
 enterprise performance 109  
 Enterprise Resource Planning (ERP)  
     1  
 enterprises 109  
 entity 21  
 entity-relationship 41  
 Entity-Relationship diagram 170  
 Entity-Relationship-model 151  
 environmental constraints 102  
 equivalence association 32  
 European Community (EC) 222  
 European Union (EU) 222  
 European Union UCITS 222  
 Event-driven Method Chain (EMC)  
     207, 209, 215  
 Event-driven Process Chain (EPC)  
     207  
 exercise price 34  
 existential dependencies 57  
 expensive redesign 17  
 expressiveness 130  
 Extended Electronic Catalog 137  
 external information objects 61

**F**

flowMark 259  
 FODA (Feature-Oriented Domain Analysis) 262  
 formal hypermedia data model 42  
 full codification 123  
 functional design 5  
 Functional Unit Test 3

**G**

gene expression chips 17  
 General Image Retrieval 78  
 generalization dependencies 57

genome sequencing 17  
 Global Design Guidelines 155  
 gradation 31  
 group decision support systems (GDSS) 196  
 guided tour 42

**H**

HDM 43  
 heterogeneous databases 17  
 hierarchical relationships 59, 62  
 hierarchy relation 81  
 higher-order information units 42  
 homonyms 71  
 horizontal specialization 47  
 HTTP protocol 56  
 HYDESIGN model 57  
 hyperbase engine 50  
 hyperform 43  
 hypermedia data model 41  
 hypermedia engines 43  
 hypermedia paradigm 41  
 hyperstorm 43

**I**

Iconic Model 221  
 Iconic Modeling Tool (IMT) 178  
 image interpretation 79  
 implementation framework 42  
 indexing 79  
 informal ontology 19  
 Information and Communication Technology (ICT) 163  
 information aspect 7  
 information chunks 58  
 information content 50  
 information objects 59, 60  
 information system (IS)  
     170, 194, 207, 239, 258  
 Information System Layer 239  
 Information Systems Analysis and Design (ISAD) 6  
 information systems modelling (ISM)  
     170  
 information technology 194  
 information-hiding concept 43  
 information-oriented aspect analysis 9

informationbase (IB) 239  
inheritance 131  
intelligent agents 176  
Inter Agent modeling 176  
Interaction Component 193  
interface definition 198  
Internal Schema (IS) 69, 75  
Internet 139  
Internet Commerce Server 140  
Intra Agent Modeling 176  
inverse link type 46  
IPM (IS Process Model) 211  
IRM (IS Resource Model) 211  
ISD Methodology 1  
ISM (IS Structure Model) 211

## K

knowledge domain 57  
knowledge elicitation 135  
knowledge sources 193  
knowledge-based system (KBS)  
development 31

## L

large Web sites 55  
layout template 43  
legacy systems 197  
link types 46  
link typing 41  
links 41  
LiveCommerce 140  
loan relationships 232  
lost in hyperspace phenomenon 42

## M

Majorant Schema (MS) 69, 70, 72  
MAS (Multi Agent System) 178  
Medial Sign (MS) 80  
Medical Image Class (MIS) 80  
Medical Region (MR) 80  
Medical Region and Medical Sign  
(MR/MS) 80  
medical signs 80  
MEMO methodology (Multi-perspective  
Enterprise MOd 207  
MESH 42, 43

MESH's context-based navigation  
paradigm 49  
MESH's object-oriented hypermedia  
data model 42  
meta model 55  
Meta-Data Coalition (MDC) 89  
meta-data nodes 159  
"meta-model" 84, 86  
meta-model technologies 86  
meta-object facility 87  
mMeta-object facility systems 89  
metadata 195  
method engineering 1, 2  
microcosm 43  
model engineering 84  
model integration 208  
Model-Driven Architecture (MDA) 85  
model-oriented software 85  
MOF (Meta-Object Facility) 85  
Molecular Biological Information 16  
molecular biology 17  
Multi-Agent System (MAS) 165  
multi-linguistic relation 81  
multifaceted content 78  
multimedia systems 78

## N

navigation areas 60  
navigation context 42, 43  
navigation structure 50  
navigational data access 41  
navigational model 66  
navigational relationships 62, 65  
navigator 61, 65  
node 43  
node content 43, 51  
node types 43  
node typing hierarchy 51  
nodes 41  
non-hierarchical relationships 59  
nonmonotonic reasoning 129

## O

Object Management Architecture  
(OMA) 151  
Object Management Group (OMG)  
151

- object oriented (OO) concepts 96, 178, 208  
 object schema 171  
 Object Systems Analysis and Design (OSAD) 6  
 object-oriented abstractions 41  
 object-oriented approach 41  
 object-oriented design patterns 17  
 object-oriented modeling 176  
 object-oriented programming languages (OOPL) 156  
 object-relational database management system (ORDBMS) 150  
 object-relational database schema 152  
 OCL (Object Constraint Language) 91, 151  
 OCL constraints 157  
 OIM (Open Information Model) 89  
 OMG (Object Management Group) 85  
 Ontological Design Patterns (ODPs) 16, 18, 19  
 ontology 17, 86, 87  
 ontology building 39  
 ontology design 18  
 ontology-based concept acquisition 31, 39  
 OOHDM 43  
 open-ended list 130  
 operational database applications 69  
 optimal decisions 108  
 optimal planning 108  
 optimization 30  
 organization aspect 8
- P**
- parallel planning 108  
 pattern 81  
 perceivable equivalencies 42  
 personal information systems (PISSs) 194, 196  
 Petri Net 8, 114  
 phase integration 208  
 platform-independent implementation framework 41  
 polygons 81  
 posteriority 132
- private-collector 45  
 problem aspect 8  
 procedural program code 55  
 process-oriented aspect 7  
 product hierarchy 141
- Q**
- questioning scheme 30, 34
- R**
- reasoning 171  
 referred rules 131  
 Residential Tenancies Act 1994 133  
 Residential Tenancies Act 1997 132  
 resource-consumption tasks 108  
 Reticular Agent Mental Models 181  
 rigid node 44  
 RMM 43  
 RTIM (for Repository Type Information Model) 89
- S**
- SBL (Structure Behavior Locality) 57  
 schema change 74  
 schema evolution 69  
 semantic Web 85  
 SENSOR project 150  
 sensu latu 122  
 sequential path 42  
 server functionality 56  
 shape 81  
 shared repository 138  
 Situated Method Engineering 2  
 SMIF RFP (Serial Model Interchange Format) 91  
 Soft Systems Methodology (SSM) 95, 96, 99  
 software agent 95  
 software components 17  
 Software Package Development Methodology (SPDM) 1, 3  
 Software Package Manufacturing Company (SPMC) 1  
 software packages 1  
 software structure 4  
 source nodes 46

spatial relations 78, 81  
SPDM 10  
SPE (Software Process Engineering) 91  
SPMC 2  
state update function 172  
static data constraint 74  
stochastic models 248  
strategical process model (SPM) 211  
strength 32  
strict rules 134  
strike price 34  
sub link type 46  
sub-concept 32  
super-concept 32  
superiority 131  
synergy 196  
synonym 32  
synonymy relation 81  
syntactic complexity 130

## T

T-cell receptor (TcR) 21  
tacit knowledge 121, 122, 123  
Tacit Knowledge Acquisition 121  
technical design 5  
Technical Unit Test 3  
Temporary Design Guidelines 156  
Terminological-Hierarchy ODP 20  
time consuming 17  
topological relations 82  
trading agents 30  
traditional business applications 56  
traditional information systems 56  
traditional ontology 38  
translation graph 157  
transmission component 200

## U

U.S. Mutual Fund Servicing 221  
UCITS 221, 223  
UML (Unified Modelling Language) 85  
UML CORBAfacility Interface Definition 152  
UML repository 150, 151, 152  
UML-based software 150

Unified Modeling Language (UML) 19, 150, 221  
uniform layout 41  
user-defined routines (UDR) 152  
user-defined types (UDT) 152  
user-driven exploration 41

## V

vagueness 130  
validation 177  
verification 177  
vertical link specialization 46  
visualization 42

## W

Web sites 56  
Web-based applications 207  
Web-Based Cooperative Information Systems (WBCISs) 193  
WIDE 259  
Work Organization 194  
Workflow API (WAPI) 269  
workflow design 261  
workflow implementation 261  
Workflow Management Coalition (WfMC) 269  
Workflow Process Definition Language (WPDL) 269  
workgroup information systems (WISs) 194, 196  
World Wide Web 57, 60  
worldview 102

## X

XMI (XML Model Interchange) 91